a result, the electrically better conducting material in the conduction zone 4 is loaded to a lesser extent and rupture of the conduction zone is prevented.

Especially if the material in the support zone 5 has a higher modulus of elasticity than the material in the conduction zone 4, a considerable relief of the material in the conduction zone can already be achieved with relatively little material in the support zone 5. This is the case, for instance, if the material of the support zone 5 is corrosion-resistant steel (modulus of elasticity 200 x 10^9 Pa) and the material in the conduction zone 4 is copper (modulus of elasticity 124 x 10^9 Pa). The support zone 5 preferably covers at least 5% but preferably not more than 20% of the area of the cross section of the filament 3.

If the material in the conduction zone ruptures nonetheless, and an interruption 6 is formed in the conduction zone 4, the support zone 5 – as is represented by way of example in Fig. 6 – constitutes a bridging of the interruption 6 of the conduction zone 4, so that the electrical conductivity of the filament 3 is not interrupted. Although the electrical conductivity of the support zone 5 can be substantially poorer than the electrical conductivity of the conduction zone 4 (the specific resistance of corrosion-resistant steel, for instance, is about 30-40 times as high as the specific resistance of copper), the total electrical conductivity of a filament 3 in such a case decreases only very little. In fact, as the support zone 5 and the conduction zone 4 from different materials are part of the same filament 3, the distance over which the support zone 5 bridges the conduction zone 4 electrically is very short, so that the higher resistance sustained by the current in the support zone 5 has relatively little influence on the total resistance over a greater length.

In the filament 3 according to Fig. 3, the conduction zone 4 constitutes a core of the filament 3, and the support zone 5 constitutes a jacket of the filament 3, which envelops the core 4. This provides the advantage that the support zone 5 constitutes a particularly effective

contribution to the take-up of bending loads exerted on the filament 3, in that the support zone 5 is located in the area of the filament 3 where bending gives rise to the greatest deformations and where the contribution to the resistance moment against bending is greatest. Also as a result of these effects, a great improvement of the life of the filaments can already be achieved with a very small proportion of material having the better mechanical properties (for instance about 5-20% and preferably about 10%). A small proportion of material having the better mechanical properties is advantageous, because as a consequence, a largest possible proportion of material having the better conductivity is available for the main function of the electrically conductive filaments, viz. the conduction of electricity.

Further, the conduction zone 4 is situated in the area of the filament 3 which deforms least in the event of bending, so that the mechanical loading thereof is comparatively limited.

In case of interruption of the conduction zone 4, the jacket-shaped support zone 5 keeps the ends of the conduction zone 4 bounding the interruption 6 very close together, in that these ends are confined within the jacket 5.

That the jacket-shaped support zone 5 envelops the conduction zone 4 further prevents exposure of the interface between the two zones 4, 5 to ambient influences which cause electrolytic corrosion there.

A further advantage of the use of a jacket-shaped support zone 5 which envelops the conduction zone 4 is that the integrity of the composite conductor is not dependent on adhesion between the two zones 4, 5. To simplify the manufacture of the filament, use is made of this advantage, by providing that the conduction zone 4 is in adhesion-free contact with the support zone 5. The necessity for a special processing operation such as welding or rolling for bonding the zones 4, 5 together can thus be dispensed with. A further advantage of the absence of adhesion between the conduction zone 4 and the support zone 5 is that in case of tearing of the

conduction zone 4, continuation of the tear into the support zone 5 or *vice versa* is prevented.

According to the present example, the material of the support zone 5 is corrosion-resistant steel, so that the jacket-shaped support zone 5 is moreover highly effective for screening the conduction zone 4 from the surroundings, thereby preventing corrosion of the conduction zone 4 and damage of the conduction zone by chafing.

In the filament 3 according to this example, as material for the conduction zone, substantially copper is used, which yields a very good electrical conductivity.

For the use of the filament 3 in electrifiable fence tape, rope or wire, the diameter of the electrically conductive filaments 3 is preferably 0.05 mm to 1 mm, a diameter of 0.2 to 0.4 mm being presently preferred most. Such filaments 3 can be manufactured in a manner known per se by rolling a strip of material around a core and sealing the strip along a seam in longitudinal direction.

It will be clear to those skilled in the art that within the framework of the present invention, many other variants are possible. Thus, as represented in Fig. 4, a filament 10 can be designed, for instance, as a sandwich construction, with a core 11 from material having better electrical conductivity disposed between two layers 12 from material having better mechanical properties.

Fig. 5 shows a further alternative exemplary embodiment of a filament 13, in which, viewed in cross section, in a central conduction zone 14 from a first material, support zones 15 from a second material having less good electrical conductivity but having better mechanical properties than the first material have been rolled-in.

Also in the examples according to Figs. 4 and 5, the conduction zone is situated in a central position, and the support zones are in peripheral positions with respect to the conduction zone, so that the support zones 12,